What is claimed is:

Claim 1. Apparatus for use in controlling the operation of at least one pharmaceutical compounder adapted to selectively transfer prescribed amounts of pharmaceutical components from individual source containers through elongated hollow transfer means to a final container in order to prepare a prescription admixture, said apparatus comprising:

computing means having memory means for storing instructions for operating the apparatus and for controlling the compounders to prepare a prescribed admixture, said memory means including data relating to a plurality of the pharmaceutical components that may be transferred to prepare the prescription admixture, and data concerning the operating characteristics of at least one of the compounders that the apparatus is adapted to control;

said computing means including at least one communication port for establishing a communication link with each compounder that is to be controlled;

said computing means being adapted to receive a prescription admixture, identify the pharmaceutical components thereof, determine the compatibility of the pharmaceutical components relative to one another, determine the order in which the components are transferred in preparing the prescription admixture, and communicate the instructions for preparing the prescription admixture to the compounders that are to be used in preparing the prescription admixture.

Claim 2. Apparatus as defined in Claim 1 wherein said computing means is adapted to convert the amount of each component to a measure in which the compounder that is to prepare the prescription admixture is able to transfer.

Claim 3. Apparatus as defined in Claim 2 wherein said computing means is adapted to convert amounts of component volume set forth in a prescription admixture to a weight measure by multiplying the specific gravity of the component by the volume set forth in the prescription admixture.

Claim 4. Apparatus as defined in Claim 1 wherein said data relating to a plurality of pharmaceutical components comprises a database having a plurality of compatibility groups, with each group having at least one of said pharmaceutical components, said database also having data specifying the compatibility and/or incompatibility of each group with respect to other groups.

Claim 5. Apparatus as defined in Claim 4 wherein at least a first one of said compatibility groups comprises components which include lipids, and a second one of said compatibility groups comprises a component that is sterile water.

Claim 6. Apparatus as defined in Claim 4 wherein said computing means determines the order in which the components are transferred so that the order is in accordance with a set of general rules of order of admixing, which general rules comprise:

phosphate salts are added before calcium salts;

calcium phosphate solubility is made based upon the volume of solution in the prescription admixture at the time calcium is added; and,

calcium is the last additive to the prescription admixture.

Claim 7. Apparatus as defined in Claim 6 wherein said computing means determines the number and location of rinses that are to be made during the order of transfer of components, with a rinse being a cleansing of at least a portion of the elongated hollow transfer means near the final container with a solution that is compatible with the next succeeding component that is to be transferred to the final container.

Claim 8. Apparatus as defined in Claim 6 wherein said cleansing solution is taken from one of the individual source containers or the final container.

Claim 9. Apparatus as defined in Claim 4 wherein said computing means includes at least one port for receiving input data for selecting whether a pharmaceutical component that includes lipids will determine the order of transfer such that the lipid containing component is transferred one of either first or last relative to all other pharmaceutical components.

Claim 10. Apparatus as defined in Claim 1 wherein said communication link can be comprised of at least one of an internet connection, a local area network connection and a wireless connection.

Claim 11. Apparatus as defined in Claim 1 wherein said apparatus is adapted to be used by users in at least two location, wherein each location can have at least one compounder, and a printer for printing labels, a terminal with a display and entry device for inputting prescription admixtures and selectable settings relating to the operation of the apparatus and compounders.

Claim 12. Apparatus as defined in Claim 11 wherein said computing means is adapted to control two compounders at each location, with one compounder being adapted to transfer components at a flow rate that is significantly higher than the other compounder.

Claim 13. Apparatus as defined in Claim 9 wherein said computing means is adapted to examine the prescription admixture and determine whether lipid components are a part thereof, determine whether the user objects to the subsequent prescription admixture that will be prepared having a probable hazy appearance because of the presence of a lipid component in the prescription admixture presently being prepared, terminate the preparation of the prescription admixture in the event the user indicates an objection and issue a warning of such probable hazing in the event the user indicates no objection.

Claim 14. Apparatus as defined in Claim 9 wherein said computing means is adapted to receive a plurality of prescription admixtures and order them into a queue for preparation, said computing means being adapted to examine each prescription admixture that is in the queue and determine the commonality of predetermined components therein, and to reorder the prescription admixtures in said queue to group together said prescription admixtures which have such commonality of predetermined components.

Claim 15. Apparatus as defined in Claim 1 wherein said computing means is adapted to retrieve data relating to a patient profile for which a prescription admixture is to be prepared, wherein the patient profile data includes at least the patient's name, age and weight, said computing means being adapted to retrieve data relating to a plurality of categories of

patients, with each category containing predetermined limits of admixture components that are specific to each category, said computing means being adapted to compare the amounts of components in a prescription admixture for a patient in one of said categories and provide a signal when a component is outside of the predetermined limits for said component in the prescription admixture.

Claim 16. Apparatus as defined in Claim 15 wherein said categories of patients comprise adult, pediatric, neo-natal and premature patients.

Claim 17. Apparatus as defined in Claim 15 wherein said signal is adapted to prevent the prescription admixture to be prepared.

Claim 18. Apparatus as defined in Claim 15 wherein said patient's profile data further includes a history of the patient's weight and admixture prescriptions over a period of time, said processing means being adapted to prepare a report concerning the patient, including a projection of the patient's weight at some time in the future.

Claim 19. Apparatus as defined in Claim 1 wherein said computing means is adapted to retrieve data relating to a patient profile for which a prescription admixture is to be prepared, wherein the patient profile data includes at least the patient's name, age and weight, said computing means being adapted to retrieve data relating to limits of amounts of admixture components that can be added to a particular patient's prescription admixture, said computing means being adapted to compare the amounts of components in a prescription admixture for a patient and require an authorized entry of data explaining the rationale of exceeding one or more of such limits.

Claim 20. Apparatus as defined in Claim 19 wherein an authorized entry of data is entry of data by at least a physician or

pharmacist.

Claim 21. Apparatus as defined in Claim 19 wherein an absence of required data explaining the rationale of exceeding one or more of such limits results in said computing means terminating the preparation of said admixture prescription.

Claim 22 Apparatus as defined in Claim 1 wherein said memory means includes data relating to the amount of fluid that is required to prime the compounder from a source container through the elongated hollow transfer means to the final container, said processing means being adapted to increase the amount of a component by the amount that is required to prime the compounder.

Claim 23. Apparatus as defined in Claim 1 wherein said processing means is adapted to receive a switchable input relating to the preparation of an admixture prescription that calls for a first component in a predetermined amount, an amount of diluent for said first component and one or more additional components in relatively small amounts, wherein the total admixture prescription is to be a predetermined total amount, said computing means being adapted to use the volume of said one or more additional components in relatively small amounts as a substitute for the same volume of diluent so that the predetermined total amount is not exceeded.

Claim 24. A method of controlling the operation of at least one pharmaceutical compounder adapted to selectively transfer prescribed amounts of pharmaceutical components from individual source containers through elongated hollow transfer means to a final container in order to prepare a prescription admixture, the method utilizing a computing means having memory means for storing instructions for operating the apparatus and for controlling the compounders to prepare a prescribed admixture, with the

memory means including data relating to a plurality of the pharmaceutical components that may be transferred to prepare the prescription admixture, and data concerning the operating characteristics of at least one of the compounders that the apparatus is adapted to control, the computing means including at least one communication port for establishing a communication link with each compounder that is to be controlled, the method comprising the steps of:

receiving a prescription admixture in the computing means;

identifying and determining the amounts of the pharmaceutical components of the prescription admixture;

determining the compatibility of the pharmaceutical components relative to one another;

determining the order in which the components are transferred during the preparation of the prescription admixture; and,

communicating the instructions for preparing the prescription admixture to the at least one compounder that is to be used in preparing the prescription admixture.

Claim 25. A method as defined in Claim 24 wherein the step of identifying and determining the amounts includes the step of converting the amount of each component to a measure in which the compounder that is to prepare the admixture prescription is able to transfer.

Claim 26. A method as defined in Claim 24 wherein the data relating to a plurality of pharmaceutical components comprises a database of pharmaceutical components that are categorized into a plurality of groups, with the components of each group having common compatibility characteristics, said database having data specifying the compatibility and/or

incompatibility of each group relative to other groups, said compatibility determining step further comprising:

examining the admixture prescription to identify the particular groups of components that are present therein, and the compatibility characteristics of each group relative to the other identified groups.

Claim 27. A method as defined in Claim 26 wherein said order determining step further comprises: determining the order of admixing so that components within groups that are compatible with one another are added concurrently or sequentially to the final container consistent with known general rules of mixing.

Claim 28. A method as defined in Claim 27 wherein said known general rules of mixing comprise:

adding phosphate salts before calcium salts;

basing calcium phosphate solubility upon the volume of solution in the prescription admixture at the time calcium is added; and,

adding calcium last to a prescription admixture.

Claim 29. A method as defined in Claim 26 wherein said order determining step further comprises determining the order of admixing whereby components within groups that are compatible with one another are added sequentially to the final container, so that the number of rinses are minimized, the rinses being made to cleans the hollow transfer means near the final container due to incompatibility of a component of one group relative to a component in another group that is next in order to be transferred.

Claim 30. A method as defined in Claim 24 wherein said step of identifying and determining the amounts of the pharmaceutical components further comprises identifying lipids as a component of the prescription admixture, and providing the user with the option of terminating the preparation of the prescription admixture if the user so elects.

Claim 31. A method as defined in Claim 30 wherein a warning is issued in the event the lipid containing prescription admixture is not terminated, which warning is that a next to be prepared prescription admixture may exhibit a hazy appearance because of the presence of lipids.